

REMARKS

Claims 1, 2, 4-9 and 11-27 are pending in this application. By this Amendment, the specification is amended to update the related applications referred to in the specification and to correct a typographical error. Claim 1 is amended to be directed to the embodiment in which the spacer layer is comprised of at least one sheeting comprised of at least two joined sheets and having pockets therein filled with display liquid, which claim clearly distinguishes over the cited art, and in particular Ota, as discussed more fully below. Also, claims 11, 12, 14 and 16 are amended to depend from claim 1. Claims 11, 12 and 14-17 are also amended to resolve possible antecedent basis issues and to more clearly define the invention in accordance with U.S. practice. Claim 6 is amended to more fully recite patentable aspects of the remaining spacer layer embodiments of the invention to more clearly distinguish over the cited art, in particular Ota as discussed more fully below. Claims 26 and 27 are added to define further aspects of the pocket-type spacer layer of claim 12, which aspects are illustrated in the specification, for example in Figure 8. Finally, claims 3 and 10 are canceled.

No new matter is added by this Amendment. Support for the amendments to claims 1, 11, 12 and 14-17 can be found in the original specification, including the original claims, Figures 4-8 and paragraphs [0039] to [0051]. Support for the amendments to claim 6 may be found in the original specification at paragraphs [0031] to [0038] and [0052] to [0058]. New claims 26 and 27 are supported by at least Figure 8 and the accompanying description of the original specification.

I. Request for Acknowledgment of Disclosed Information

With the March 12, 2004 Office Action, the Patent Office returned to the undersigned a partially initialed Form PTO-1449 that had been submitted to the U.S. Patent and Trademark Office on April 18, 2002. Specifically, the partially initialed Form PTO-1449 was

initialied next to the four U.S. Patent references, confirming their consideration. However, the form was not initialied next to any of the four related patent applications listed under "Other Documents" on the form.

Submitted with this Amendment is a further Form PTO-1449 in which each of these four related applications is again listed, this time also along with the now corresponding U.S. Patent Nos. for each application. The Examiner is respectfully requested to initial next to each application to confirm its consideration, and then return the initialied Form PTO-1449 to the undersigned with the next communication from the Patent Office.

II. Rejection Under 35 U.S.C. §103(a)

Claims 1-25 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 6,445,489 (Jacobson) in view of U.S. Patent No. 3,668,106 (Ota). This rejection is respectfully traversed.

A. Claims 1, 2, 4, 5 and 11-17

Independent claim 1 recites an electrophoretic display device comprising a spacer layer sandwiched between two conductive film substrates, at least one of which is transparent. The spacer layer defines a multiplicity of individual reservoirs within the display device, each of the individual reservoirs being filled with a display liquid, wherein in the spacer layer comprises at least one pocket sheeting layer comprised of at least two sheets joined together and containing a pattern of pockets within the joined sheets, the pockets defining the individual reservoirs. This embodiment of the presently claimed invention is illustrated in Figs. 4-8 of the present specification.

Applicants respectfully submit that neither Jacobson nor Ota, singly or together, teaches or suggest the electrophoretic display device of claim 1.

Jacobson describes an electrophoretic display that includes each of light-emitting layer 10, a photoconductive layer 12 and an electrophoretic layer 14. See the Abstract. In the

Office Action, it was alleged that Fig. 9 of Jacobson described an electrophoretic display device that included a unitary spacer layer 62 sandwiched between two conductive film substrates, at least one of which is transparent. Applicants respectfully disagree with this characterization of the teachings of Jacobson. (1)

In Fig. 9 of Jacobson, an embodiment is illustrated in which the electrophoretic display device is used together with an external paper document 64 in order to generate an image. The electrophoretic display of this embodiment is described and shown in Fig. 9 as including paper document 64, light diffusor 62, fenestrated light-emitting layer 60, photoconductive layer 12, electrophoretic layer 14, clear top electrode 16, and a source of voltage 18. See col. 10, lines 52-59, where Jacobson also indicates that the light diffusor 62 is optional and may also be embodied as a clear spacer.

While Jacobson indicates that the light diffusor 62 may be a clear spacer layer in Fig. 9, such does not teach or suggest the electrophoretic display device of claim 1, contrary to the assertion of the Patent Office. Specifically, such clear spacer in Fig. 9 of Jacobson would not be between two conductive film substrates as required for the electrophoretic display device of present claim 1. Bottom paper document 64 in Fig. 9 of Jacobson is neither a part of the device nor a conductive film.

The Patent Office turned to the teachings of Ota as allegedly remedying the deficiencies of Jacobson. In particular, the Patent Office alleged that it would have been obvious for one of ordinary skill in the art to have replaced the spacer 62 in Fig. 9 of Jacobson with a different spacer such as described in Ota. Applicants respectfully disagree. (2)

First, Applicants again respectfully submit that even if the clear spacer in Fig. 9 of Jacobson were to have been replaced with a different spacer, the electrophoretic display device of claim 1 still would not have been achieved because, as discussed above with respect

to Jacobson, such spacer layer still would not be sandwiched between two conductive film substrates as required in claim 1.

Second, Ota also fails to teach or suggest a spacer layer comprising at least one pocket sheeting layer comprised of at least two sheets joined together and containing a pattern of pockets within the joined sheets, which pockets define individual reservoirs of the display device. At best, Ota describes a spacer sheet 41 with multiple holes 42 therein that define separate suspension units in an electrophoretic suspension layer 22. See Figs. 12a-12c and 13 of Ota. However, such sheet with holes therein clearly fails to teach or suggest a spacer layer comprising at least one pocket sheeting layer being comprised of at least two sheets joined together and containing a pattern of pockets within the joined sheets, each of the pockets being filled with a display liquid, as required in present claim 1.

As described in the present specification, such pocket-type spacer layer is similar to "bubble wrap," with display liquid filling the individual bubbles. The advantage of using such pocket-type spacer layer is that the spacer layer may be quickly and easily produced, and further that multiple pocket sheeting layers, preferably each exhibiting a different color, may be easily placed together to form a multi-color display device. See paragraph [0046] of the present specification. For example, as shown in Fig. 6-8 of the specification, the multiple pocket sheeting layers may be stacked together, without substantial overlap of any of the pockets of the sheeting layers (i.e., none of the pockets are pressed together against each other in a direction that is perpendicular to a plane in which the joined sheeting layers lie). Ota clearly fails to teach or suggest not only a pocket-type spacer layer comprised of at least two sheets joined together and having pockets therein filled with a display liquid, but also clearly fails to teach or suggest any such advantages that might be obtained through use of such a

pocket-type spacer layer. Accordingly, Ota clearly would not have led one of ordinary skill in the art to the presently claimed invention.

B. Claims 6-9 and 18-25

Claim 6 of the present application recites an electrophoretic display device comprising a spacer layer sandwiched between two conductive film substrates, at least one of which is transparent, the spacer layer defining a multiplicity of individual reservoirs within the display device that are completely separated from each other, each individual reservoir being filled with a display liquid, and the spacer layer being selected from the group consisting of:

a screen comprised of fibers in which holes within the screen define the individual reservoirs;

a laser punched spacer comprised of a laser ablative material in the form of a sheet having holes laser punched therein;

an etched photoresist layer comprised of a photoresist material, formed upon one of the conductive film substrates, and having a plurality of openings etched through the photoresist material; and

a composite etched layer comprised of a composite of two photoresist layers each comprised of a photoresist material that sandwich a conductive film with holes etched through the composite.

Applicants respectfully submit that nothing in either Jacobson or Ota would have led one of ordinary skill in the art to any of the embodiments recited in claim 6.

First, as was extensively discussed above with respect to claim 1, Jacobson fails to teach or suggest a spacer layer sandwiched between two conductive film substrates as required in claim 6. Accordingly, Jacobson fails to teach or suggest the presently claimed

invention, and even if a spacer layer of Ota were substituted for the spacer layer 62 illustrated in Fig. 9 of Jacobson, the presently claimed invention still would not have been achieved.

Further, here again Applicants respectfully submit that Ota fails to teach or suggest any of the spacer layers recited in claim 6, and thus the combined teachings of Jacobson and Ota still would not have led one of ordinary skill in the art to the invention of claim 6.

First, nowhere does Ota teach or suggest a spacer layer comprised of screen comprised of fibers in which holes within the screen define the individual reservoirs that are each filled with the display liquid and are completely separated from each other. The sheet 41 illustrated in Fig. 13 is nowhere taught or suggested to be comprised of fibers in Ota.

For completeness, Applicants note that Ota does describe a different type of spacer that may be a screen comprised of fibers. See col. 7, lines 14-38. However, as clearly shown in Fig. 8b of Ota, such fibrous screen in Ota is merely used to prevent the major housing walls 31 and 32 from touching each other (col. 7, lines 18-21). This screen of fibers is not taught or suggested to contain holes that are able to completely separate all of the individual reservoirs from each other as required in the presently claimed invention. This screen spacer of Ota thus is not taught or suggested to be able to form individual reservoirs or to completely separate individual reservoirs from each other as required of the screening embodiment recited in claim 6.

Regarding a laser punched spacer layer comprised of a laser ablutable material in the form of a sheet having holes laser punched therein, Ota also fails to teach or suggest such a spacer layer. As discussed at paragraph [0037] of the specification, the spacer layer must be comprised of a material that is capable of being cut by the laser, i.e., it must be comprised of a laser ablutable material. Ota nowhere teaches or suggests a spacer layer comprised of a laser

ablative material, much less a spacer layer comprised of a laser ablative material in which individual reservoirs therein have been formed by a laser.

Finally, Ota also fails to teach or suggest a spacer layer that is comprised of a photoresist material with openings or holes therein that form the individual reservoirs of the spacer layer. As with the laser ablative material discussed immediately above, Ota nowhere teaches or suggests that a spacer layer must be comprised of a photoresist material that can be etched to form openings or holes therein. Moreover, Ota nowhere teaches or suggests any kind of spacer layer comprised of a photoresist material that actually has openings or holes formed therein in order to form individual reservoirs of the spacer layer as required in claim 6.

C. Conclusion

For all the foregoing reasons, Applicants respectfully submit that Jacobson and Ota, whether considered singly or together, would not have led one of ordinary skill in the art to the presently claimed invention. Reconsideration and withdrawal of this rejection are respectfully requested.

III. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1, 2, 4-9 and 11-27 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



James A. Oliff
Registration No. 27,075

Christopher W. Brown
Registration No. 38,025

JAO:CWB/rav

Date: April 15, 2004

OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

**DEPOSIT ACCOUNT USE
AUTHORIZATION**
Please grant any extension
necessary for entry;
Charge any fee due to our
Deposit Account No. 24-0037